

Injection Molding Technology

Materials, Processing & Design Considerations

22-23 August 2018, Denver, Colorado

Venue: Crowne Plaza Denver
Airport Convention Center

This two-day program provides a comprehensive overview of the injection molding process addressing each of the four pillars of successfully molded parts: part design rules, material selection, mold design, and molding process control. Because each topic is introduced at the fundamental level, this training program is suitable for those new to the industry and for those wanting a more in-depth treatment of this important plastics processing technology. This program is suitable for purchasing agents, product designers, and manufacturing engineers. Attendees receive a richly documented set of notes that include images of the numerous product examples that will be on display and discussed throughout the workshop. A basic plastics ID kit is provided as well. Videos of mold actions and hands-on training with models of molds and example products will be incorporated throughout the program.

Program Outline

1. Materials for Molding

- a) Classification of Resins with product samples
 - Thermoplastics vs. Thermosets
 - Semi-crystalline vs. Amorphous Thermoplastics
 - Naming schemes (chemical, generic, trademark)
- b) Mechanical and Thermal Properties
 - Stress/Strain and Creep,
 - Glass Transition and Melt Temperature
- c) Additives overview

2. Injection Molding Process

- a) Machine overview: injection unit, clamp unit, mold, controller
- b) Processing
 - Melting, injection, packing, part ejection
 - The need for packing
 - Typical process set-up procedure
- c) Mold design
 - Stationary vs. Movable halves
 - Ejection methods and hardware
 - Mold cooling
 - Gate types
 - Venting
 - Surface finish
 - Two-plate vs. Three-plate
 - Hot vs. Cold runner

3. Injection Molded Part Design Overview

- a) Nominal wall
- b) Draft and Radii
- c) Part Integration
- d) Synergy of design, material selection, tool construction, and process control
- e) Basics of decoration & assembly of molded parts
- f) Design technology: mold filling simulation and prototyping

4. Molding Defects and Remedies with product samples

- a) Primary causes
- b) Common defects

5. Variations of Injection Molding with product samples

- a) Insert Molding and Over Molding
- b) Co-injection and Gas-assist
- c) Foaming technology
- d) Metal Powder (MIM)

6. Cost Analysis for Molded Parts

- a) Fixed and Incremental Costs
- b) Effect of Mold Cavitation on Unit Cost

7. Injection Molding Competition

- a) Thermoforming brief overview
- b) Iso-cost study of forming vs. molding



Trainer: Dr. Lou Reifschneider

Lou Reifschneider is a professor of Engineering Technology at Illinois State where he has taught plastics technology classes for twenty years in the Plastics Processing Laboratory that he managed. In addition, Dr. Reifschneider has presented numerous technical workshops related to plastics technology for industry and has consulted in projects involving the molding, forming, and extrusion of novel thermoplastic materials. Prior to teaching, he worked as a product designer and process engineer in the plastics industry. Lou received his BS in Mechanical Engineering from the University of Notre Dame, MS Mechanical Engineering from the University of Minnesota, and his PhD Mechanical Engineering from the Ohio State University.

Registration Fee

- **US\$ 900 /Person**
The registration fee includes: Training documentation, plastics ID kit & test bars to take home, lunch and refreshments and authorized Training Certificate documenting your attendance.
- **EARLY-BIRD REGISTRATION:**
5% Discount – before 10 August 2018.
- **GROUP REGISTRATION:** For a group of 3 or more delegates from the same organization, 5% discount will be offered on total registration fee.

Venue

Crowne Plaza Denver Airport Convention Center

15500 East 40th Street. Denver. Colorado. 80239
Main 303-371-9494 Fax 303-375-9528 (Free Shuttle from Airport to Hotel)

How to Register?

Please download registration form at www.plastics-industry.org and send filled registration form to Mr. Len Czuba (LCzuba@czubaenterprises.com)

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